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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,627	10/27/2004	Bill William Shurvinton	60282.00202	5168

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EXAMINER

NGUYEN, TUAN HOANG

ART UNIT	PAPER NUMBER
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2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/506,627	Applicant(s) SHURVINTON ET AL.	
	Examiner Tuan H. Nguyen	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response To Arguments

1. Applicant's arguments, see applicant's remarks, filed on 12/07/2006, with respect to the rejection(s) of claims 22-43 under 35 U.S.C § 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Feldman, Paul H. (European Publication No. EP 0 461 314 hereinafter, "Feldman") and Ylitalo et al. (U.S PAT. 7,139,324 hereinafter, "Ylitalo").

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 22, 27-29, 31-35 and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feldman, Paul H. (European Publication No. EP 0 461 314 hereinafter, "Feldman") in view of Ylitalo et al. (U.S PAT. 7,139,324 hereinafter, "Ylitalo").

Consider claims 22 and 34, Feldman teaches a power control device comprising: a calibration unit (figs. 1 and 2) configured to calibrate the transmission or receiving power (amplitude stabilization) of a transmitter or receiver in a mobile communication network, the calibration unit including a summer (fig. 2 power combiner 28) connected to an antenna array (10) of the transmitted or receiver, wherein the summer is configured to sum transmission or reception signals (fig. 2 col. 5 line 50 through 6 line 10), and a common calibrating device (figs. 1 and 2) configured to calibrate (amplitude stabilization) the summed signals, and a power control loop configured to control the output power of the power amplifier (12) (fig. 1 col. 5 lines 11-27), the power control loop containing a detector (18) configured to detect the output of the power amplifier (fig. 2 col. 5 line 50 through 6 line 10).

Feldman does not explicitly show that a controller configured to control the detector so as to detect the output of the power amplifier only during a time of output of a training sequence, wherein the device is configured to control the power based on the detected output power, and wherein the device is configured to transmit or receive burst signals for the antenna array and the burst signals include the fixed training sequence.

In the same field of endeavor, Ylitalo teaches a controller (230) configured to control the detector (236) so as to detect the output of the power amplifier (from a transmitter 242) only during a time of output of a training sequence (figs. 11 and 14 col. 10 line 5-10 and col. 13 lines 1-13 e.g., the training sequence identifies the source of signal S_{IN} and the individual beam to remote station so that the remote station can separately discern the beams. In this way, remote station can separately receive the

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two beams using the training sequences. The transmit powers are distinguishable (detect) at remote station by use of orthogonal training sequences as may be used in a TDMA base station (fig. 12)), wherein the device is configured to control the power based on the detected output power (col. 12 lines 33-38), and wherein the device is configured to transmit or receive burst signals for the antenna array and the burst signals include the fixed training sequence (col. 13 lines 1-13 e.g., a data slot in a time division system may include, for example, 58 data bits, followed by 26 bits of a training sequences (fixed training sequence) followed by 58 data bits, as in a GSM system. The training sequence identifies the source of signal S_{IN} and the individual beam to remote station so that the remote station can separately discern the beams).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, a controller configured to control the detector so as to detect the output of the power amplifier only during a time of output of a training sequence, wherein the device is configured to control the power based on the detected output power, and wherein the device is configured to transmit or receive burst signals for the antenna array and the burst signals include the fixed training sequence, as taught by Ylitalo, in order to improve the down link performance of a cellular radio system and minimize undesired effects of fading and drop out.

Consider claims 23 and 35, Ylitalo further teaches the controller configured to issue a control signal that is applied to a control input of the detector, and the controller is configured to generate the control signal with a timing so as to operate the detector

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only when the power amplifier outputs the fixed training sequence (figs. 11 and 14 col. 10 line 5-10 and col. 13 lines 1-13).

Consider claims 27 and 39, Ylitalo further teaches the device is configured to measure, for transmit calibration, idle timeslots with only one column active (col. 10 lines 34-56 e.g., the base station selects adjusted transmit powers (transmit calibration) to form the basis for the powers to be transmitted from the antennas during the next cycle of the closed loop beam power management. The loop cycle delay may be one time slot (idle timeslots with only one column active) as in a third generation TDMA system).

Consider claims 28 and 40, Ylitalo further teaches for receive calibration, a dummy burst is generated and modulated onto a carrier, the device is configured to receive the dummy burst in each branch of a transmitter, to measure the amplitude and phase differences between each path are measured (col. 22 line 35-56) and to use the result of such measurement as a new receive calibration offset (col. 10 line 46-56).

Consider claim 29, Feldman further teaches a chipset of a mobile terminal which is used for calibration in conjunction with the calibration unit (col. 4 lines 17-32).

Consider claim 31, Feldman further teaches an open loop static power control configured to control the output power of the power amplifier, wherein the open loop

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static power control comprises a controllable attenuator arranged upstream of the input side of the power amplifier, the controllable attenuator configured to control by the controller (col. 3 line 55 through col. 4 line 32).

Consider claims 32 and 41, Feldman further teaches the device is configured to set the output power on the basis of information measured in a previous timeslot and to avoid making power corrections during a measured timeslot (col. 5 lines 46-49).

Consider claims 33 and 42, Feldman further teaches the device is comprised in a smart antenna structure comprising several antennas, including a power amplifier in each antenna path, a common attenuator, and a splitter arranged between the common attenuator and the antenna paths, each power amplifier including an embodiment of the power control loop (col. 5 line 56 through col. 6 line 37).

5. Claims 24-26, 30, and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feldman in view of Ylitalo, and further in view of Visser (U.S. PUB. 2002/0177417).

Consider claims 24 and 36, Feldman and Ylitalo, in combination, fails to teaches a transmission branch and a reception branch, and a first switch configured to switch the connection of the summer either to the transmission branch or to the reception branch.

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However, Visser teaches a transmission branch and a reception branch, and a first switch for switching the connection of the summing either to the transmission branch or to the reception branch (page 1 [0004]).

Therefore, it is obvious to one of ordinary skill in the art at the time the invention was made to incorporate the disclosing of Visser into view of Feldman and Ylitalo, in order to provide switching of a transmit branch in a transceiver to an antenna feed point that also under high voltage output signals delivered by a transmit power output stage causes no component break through or other problems.

Consider claims 25 and 37, Visser further teaches a second switch configured to switch the connection of the transmission branch either to the summer or first switch, or to a reference coupler configured to supply a reference signal to the transmission branch (page 1 [0004]).

Consider claims 26 and 38, Visser further teaches switch provided in the transmission branch configured to temporarily blank the transmission branch (page 1 [0006]).

Consider claim 30, Visser further teaches a passive coupling network in the antenna array and a calibration board which works at radio frequencies in conjunction with the calibration unit (page 3 claim 10).

Conclusion

6. Any response to this action should be mailed to:

Mail Stop_____ (Explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

(571) 273-8300

Hand-delivered responses should be brought to:

Customer Service Window

Randolph Building

401 Dulany Street

Alexandria, VA 22313

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan H. Nguyen whose telephone number is (571)272-8329. The examiner can normally be reached on 8:00Am - 5:00Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Maung Nay A. can be reached on (571)272-7882882. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information Consider the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan Nguyen
Examiner
Art Unit 2618

T.N.


NAY MAUNG
SUPERVISORY PATENT EXAMINER